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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: **Pontus Söderström**)  
Serial No. **10/018,254**) Group Art Unit: **3616**  
Filing Date: **March 26, 2002**) Examiner: **Eric D. Culbreth**  
For: **AIR-BAG ARRANGEMENT**) Customer No.  
Atty. Docket No. **31577-176922**) **26694**  
\_\_\_\_\_  
PATENT TRADEMARK OFFICE

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**DECLARATION UNDER 37 C.F.R. § 1.131**

Sir:

I, Pontus Söderström, declare that:

1. I am the sole inventor for the above-identified Application (Application);
2. Acts relied upon to establish the date of invention described in the Application prior to February 26, 1999 were carried out in the United States as recorded in an Invention Record Approval Document (IRAD, Exhibit 1);
3. Prior to February 26, 1999, I conceived of the invention described in the Application while working for the Assignee, Autoliv Development AB (Autoliv), and recorded it in the IRAD,

Page 1, Abstract and Additional Information and Justification, page 2, line 4, and page 3, lines 10-14 of the IRAD show the invention being an airbag unit for foot of a motor vehicle which is to be placed under the feet of an occupant of the motor vehicle,

Page 1, Abstract, and page 3, lines 19-23 of the IRAD show the airbag unit having a substantially sealed, damp-proof, housing containing the airbag,

Page 1, Abstract, and page 3, lines 16-20 of the IRAD show the housing containing a substantially rigid upper cover as it can be made of a sheet of nylon, polypropylene or a similar plastic and function in load distribution,

Page 1, Abstract, and page 3, lines 21-24 of the IRAD show the cover of the housing is secured to the base of the housing, and

Page 1, Abstract and page 3, lines 10-26 of the IRAD inherently show when the airbag is inflated, the cover of the housing above the airbag is elevated and separated from the base of the housing;

4. From just prior to February 26, 1999 to June 18, 1999, due diligence was shown in that:

From a time prior to February 26, 1999 to March 22, 1999, information was gathered at Autoliv and sent to patent counsel at Forrester Ketley (FK),

From March 22 to March 26, 1999, FK prepared a draft patent specification and sent it to Autoliv for review and comments,

From March 26, 1999 to March 31, 1999, Autoliv reviewed the draft and forwarded it to me for review and comments,

From March 31, 1999 to June 15, 1999, I reviewed and communicated with Autoliv regarding the draft,

From June 15, 1999 to June 17, 1999, Autoliv sent the draft to FK for changes,

From June 17, 1999 to June 18, 1999, FK amended the draft;

5. On June 18, 1999, FK filed the British counterpart (Application No. 9914267.1) from which the Application claims priority;

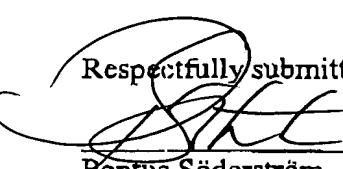
6. All statements made of my own knowledge are true and all statements made on information and belief are believed to be true.

It is acknowledged that willful false statements and the like are punishable by fine or imprisonment, or both (18 U.S.C. §1001) and may jeopardize the validity of the application or any patent issuing thereon.

Date:

July 12, 2007

Respectfully submitted,

  
Pontus Söderström

Doc# 559767



## COMPANY PRIVATE

Invention Record Approval

Ticket Number to be entered by Patent Dept.

Title

*Accepted*  
*for*

Packaging system for Inflatable Curtain airbag module to protect airbag from environment and provide load distribution over airbag surface

Date of Invention Record

Submitted by

Pontus Soderstrom

## ABSTRACT

The disclosure aims at providing a modular foot airbag system with both environmental protection, and load distribution integrated into a unit. It can easily be handled in the assembly process. My proposal is to laminate/sandwich the flat, uninflated airbag between a thicker (3-5 mm) plastic sheets by means of glue or some fastener that can come loose with a lower force than the deploying airbag will expose it to. The edges of the two plastic sheets should then be attached to each other by means of, for instance, ultrasonic welding, melting, or any other method that provides an environmentally resistant seal. The airbag would thereby be enclosed in an envelope of plastic that both protects from environmental exposure and provides load distribution to the cushion. It would also be easier to handle this unit in both our own process and at the vehicle manufacturer since it is a one unit and provisions for attachment to other components or the vehicle body easily could be added to the envelope.

## Additional Information and Justification for Recommendation and Priority, if needed.

I believe that footbags are a coming product and there is a definite need for an easy way of packaging the system. The footbag is located in a very severe area in the vehicle, where it is exposed to all kinds of environmental, and mechanical stress. We also need a smart packaging solution that minimizes cost while maintaining its performance properties. Therefore, I think that the priority on this patent should be at least medium.

## Recommendation of Patent Committee

(Not required before submittal to the Patent Department)

- File U.S. Patent Application
- Conditional Filing Approval
- Trade Secret
- Publication

- Not Accepted
- Hold

Date

## Recommendation of Engineering Manager (Required for Submittal)

- File U.S. Patent Application
- Trade Secret
- Publication

Engineering Manager \_\_\_\_\_

Date \_\_\_\_\_

## ASP Patent Department Manager

Date

## Recommendation of Engineering VP (Required for Submittal)

- File U.S. Patent Application
- Trade Secret
- Publication

Engineering VP \_\_\_\_\_

*Pontus Soderstrom*

Date

COMPANY PRIVATE

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Docket No.



**Invention Record**

Business Unit  
VA, Auburn Hills, MI

*Carpet*

Descriptive Title: Packaging system for Inflatable ~~Curtain~~ airbag module to protect airbag from environment and provide load distribution over airbag surface

Key(s) (for search and/or classification Purposes)

(limit to 4 keywords with 19 characters each) Front airbags, airbag module, environment, load distribution

To what product(s) or project(s) does the invention relate?  
(Include code number or name and a written description).

The Inflatable Carpet (INCA)

To fulfill your *duty of candor* to the Patent Office to disclose *pertinent prior art*, to help the attorney to understand the field of the invention, to assist the attorney in distinguishing over the most pertinent prior art, and to guide the searching for pertinent prior art, please advise us of prior art, whether it be from within or outside of the company (attach copies if available).

1. Patents/Patent Applications.
2. Reports.
3. Publicly known or used products, processes or practices, e.g., of Autoliv or competitors, even if not described in printed publication.
4. Product Literature, trade publications, catalogs, advertising brochures, etc.
5. Other related Autoliv Invention Records.

*do not know of any*

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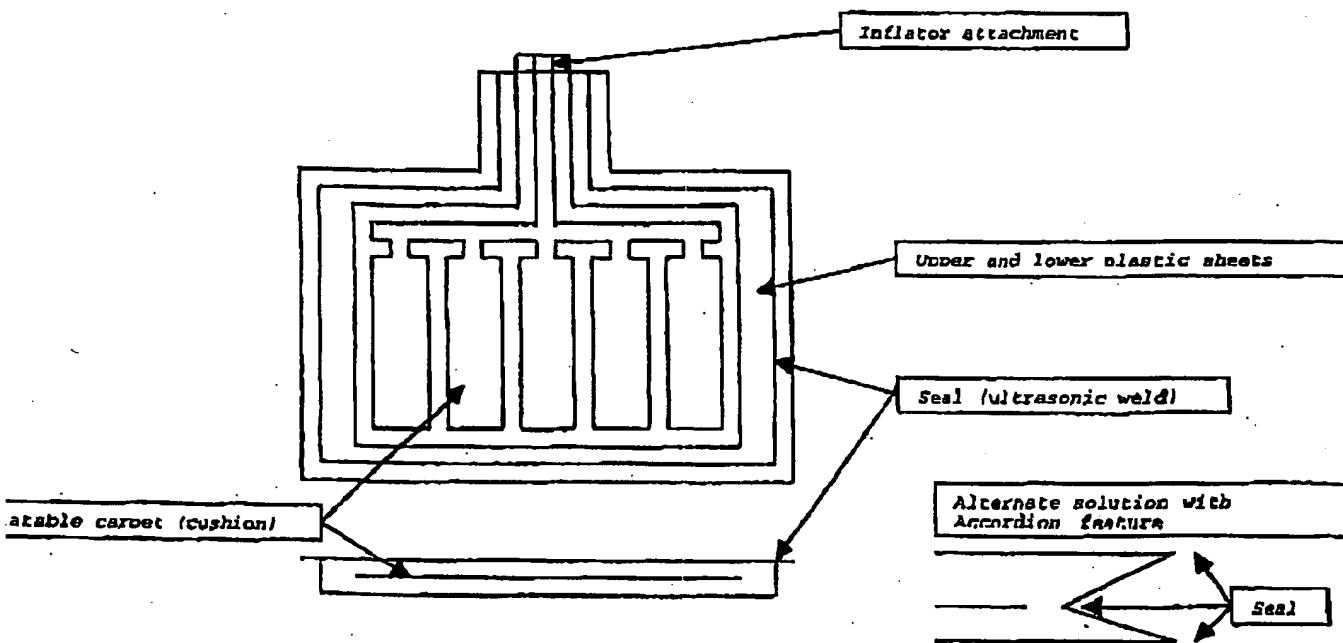
Describe the Invention. In doing so, consider the following:

- 3 What do you presently believe the novelty of the invention or the departure of the invention from what you know or believe to be the prior art or practice?
- 3 In mechanical cases, you should include a sketch of at least the part of the invention that is novel or is a departure from the prior art. Such a sketch may be provided on an attached sheet.
- 3 What problem(s) in the prior art and/or what need(s) is solved by your invention? How do you believe that the novelty of the invention solves the problem(s), meets the particular need(s), or represents an improvement (in any respect) over prior art of which you are aware?
- 3 You may describe any surprising or unexpected result achieved by the invention and explain why such result is surprising or unexpected. This usually is particularly applicable to chemical inventions.

Inflatable carpet is an airbag system devised to protect the lower extremities from injury due to high loads and acceleration in a crash where the wall intrudes into the passenger compartment. To be able to do this, the airbag will have to be installed in the vehicle floor, under the carpet. The area of the vehicle is exposed to several environmental factors, like humidity, abrasion (blunt and puncturing), heat, etc. The inflatable carpet must be installed spread out, flat between the carpet and underlying foam pads in order to inflate rapidly and cover the part of the floor where the feet are during a crash.

In order to be able to take up the loads from the feet to the floor in the inflatable curtain, without bottoming out through the cushion due to too high surface pressures, a load distribution member has to be placed on top of the airbag. This could be, for instance a sheet of nylon, polypropylene or similar plastic.

The design in this disclosure aims at providing a modular foot airbag system with both environmental protection, and load distribution integrated in a module that can easily be handled in the assembly process. My proposal is to laminate the flat, uninflated, airbag between a thicker (3-5 mm) load distribution member (a sheet of plastic), and a thinner sheet of the same material. The airbag should be kept flat and distributed between the plastic sheets by means of glue or some fastener that can come loose with a lower force than the deploying airbag will expose it to. The edges of two plastic sheets should then be attached to each other by means of, for instance, ultrasonic welding, melting, or any other method that provides an environmentally resistant seal. The airbag would thereby be enclosed in an envelope of plastic that both protects from environmental exposure and provides load distribution to the cushion. It would also be easier to handle this unit in both our own process and at the vehicle manufacturer. As it is now, one unit and provisions for attachment to other components or the vehicle body easily could be added to the envelope. The envelope could also be fitted with an Accordion feature to allow the system to inflate unimpededly.



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The following information is necessary or useful in completing the drafting of a patent application. Any of the following information which can be, should be, provided at this time. Attachments are invited and encouraged with this submission and whenever available in the future as work progresses.

- a. Detailed laboratory examples of the invention showing how it is made and used.
- b. Identification of the best mode known to you of practicing the invention, as well as possible alternatives.
- c. Sketches, photographs, graphs, lab notebook pages, company reports, etc., including material (1) helpful to make the invention clear and (2) to establish the date of invention.

Please circle the appropriate answer to each question below. Explain "YES" answer in the space provided after Question 13.

Are any potential inventors not presently employed by the company?

Yes

N

Has any aspect of the invention been disclosed to any person not presently employed by the Company (whether in a printed publication, orally, by private communication, in a U.S. or foreign patent application or patent, by exposure of nonemployees to a commercial or experimental product embodying the invention, etc.)?

Yes

No

Has any product embodying the invention or made according to the inventive process been offered for sale (whether or not actually sold)?

Yes

No

any product embodying the invention or made according to the inventive process been distributed to anyone outside the Company?

Yes

N

Was the invention first conceived or first successfully practiced under a government-related research and development program?

Yes

No

Is any information pertinent to the invention classified as "Top Secret", "Secret", "Confidential", or "Restricted Date" by the U.S. government?

Yes

N

Was the invention first conceived, first successfully practiced, or ever disclosed outside the United States?

Yes

N

Have any plans been made to commercialize, disclose, or provide samples of the invention to persons outside the Company?

Yes

N

Elaborate on any "YES" answers to Questions 6-13 here. Attach extra sheets if necessary.

\* are starting a concept readiness study with Ford Luminant

For each person believed to be an inventor, and what he/she is believed to have individually contributed to the invention:

Location	Individual Contribution
new Söderström	ANA, Auburn Hills, MI

All

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Please, list a "Designated Contact" who will be the primary person the attorney will contact regarding patent application preparation and prosecution. This person is likely to be one of the above-identified inventors, but may be a non-inventor who is knowledgeable about the subject matter.

re  
Luis Söderström

Phone  
(248) 853 4632

Fax  
(248) 853 3663

Recommended filing priority and target for filing application

<b>URGENT</b>	-- Immediate
<b>High</b>	-- Two months after receipt by Patent and Trademark Dept.
<b>Medium</b>	-- Five months after receipt by Patent and Trademark Dept.
<b>Low</b>	-- Eight months after receipt by Patent and Trademark Dept.

The following information is requested to assist in prioritizing application filing and/or prosecution of the application.

=Commercialization expected by \_\_\_\_\_  
=Competitive activity known or suspected? \_\_\_\_\_  
=Contemplated useful life of invention in years \_\_\_\_\_

=Public Disclosure expected by \_\_\_\_\_  
=Expected date of first use \_\_\_\_\_  
=Other \_\_\_\_\_

Each Company employee listed in response to item 14 should sign and date this form below:

Initials <u>LPS</u>	Date _____	Citizenship <u>Swedish</u>
re Address <u>3550 Normandy</u> <u>ROCHESTER, MI 48306</u>	SS# _____	
Initials _____	Date _____	Citizenship _____
re Address _____	SS# _____	
Initials _____	Date _____	Citizenship _____
re Address _____	SS# _____	

At least two Company employees who clearly consider themselves not to be inventors should read the entire invention disclosure, then complete, sign and date this form in the space provided.

I hereby certify that we have read this entire invention record, including 5 pages of attachments, and that we understand the invention listed in this record.

Initials <u>D. W. Schneider</u>	Date _____
re name and location) <u>DAVID W. SCHNEIDER</u>	<u>ROCKVILLE HILLS, MI</u>
Initials <u>B. Karczewski</u>	Date _____
re name and location) <u>Buckhard Karczewski</u>	<u>Rockville Hills, MI</u>

**itoliv Inc.**  
10 Airport Rd, Ogden, UT 84405

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